



February 13, 1991

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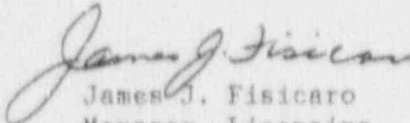
U. S. Nuclear Regulatory Commission  
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SUBJECT: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
License Event Report 50-368/91-001-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), attached is the subject report concerning degraded plant fire barriers which were not properly identified during routine inspections due to inadequate communications between different plant departments.

Very truly yours,

  
James J. Fisicaro  
Manager, Licensing

JJF/LAT/mmg  
Attachment

cc: Regional Administrator  
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit Two

DOCKET NUMBER (2)	PAGE (3)
050003681	OF04

TITLE (4) Degraded Plant Fire Barriers Which Were Not Properly Identified During Routine Inspections Due To Inadequate Communications Between Different Plant Departments

EVENT DATE (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)														
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)												
0	1	1	4	9	1	9	1	--	0	0	1	--	0	0	0	2	1	3	9	1		050003681

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)	
POWER LEVEL (10)	1	0	0
		20.402(b)	20.405(c)
		20.405(a)(1)(i)	50.36(c)(1)
		20.405(a)(1)(ii)	50.36(c)(2)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)
		20.405(a)(1)(iv)	50.73(a)(2)(ii)
		20.405(a)(1)(v)	50.73(a)(2)(iii)
			50.73(a)(2)(iv)
			50.73(a)(2)(v)
			50.73(a)(2)(vi)
			50.73(a)(2)(vii)
			50.73(a)(2)(viii)(A)
			50.73(a)(2)(viii)(B)
			50.73(a)(2)(ix)
			50.73(a)(2)(x)

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number
Larry Taylor, Nuclear Safety and Licensing Specialist	Area Code: 501964-1500

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to NRPDS	Cause	System	Component	Manufacturer	Reportable to NRPDS

SUPPLEMENT REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)	<input checked="" type="checkbox"/> No	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

In January 1991, while performing additional inspections of plant fire barriers following the recent completion of a routine eighteen month surveillance of the barriers, fire protection personnel discovered several deficiencies which had not been identified during performance of the surveillance activity. Based on evaluations of the deficiencies, it was determined that three fire barriers separating safety related areas were inoperable. Upon discovery of the conditions roving fire watches were established in the affected areas. The root cause of the failure to identify the deficiencies during the surveillance activity was attributed to inadequate communication between Fire Protection personnel and electrical maintenance during a prejob briefing conducted prior to performing the surveillance. Appropriate actions have been initiated to improve the procedures used for inspections and to provide additional training of inspection personnel. Based on the availability of fire detection and fire suppression systems for the affected plant areas and fire brigade personnel, there was no safety significance to these conditions.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

A. Plant Status

At the time of discovery of these conditions, Arkansas Nuclear One, Unit Two (ANO-2) was operating at 100 percent of rated thermal power in Mode 1 (Power Operations). Reactor Coolant System (RCS) [AB] pressure was approximately 2250 psia and RCS temperature was about 580 degrees Fahrenheit.

B. Event Description

Due to previously reported findings that some degraded fire barriers and penetration seals were not being effectively identified during the performance of the periodic inspections required by the Technical Specifications (TS) i.e., routine eighteen month surveillances, (see LER 50-368/90-017) ANO committed to reinspect approximately ten per cent of the ANO-2 fire barrier penetrations following completion of the next scheduled TS surveillance. The conditions discussed below were identified as a result of these additional inspections which were performed by personnel from the ANO Fire Protection organization.

In January 1991, while performing followup inspections of fire barriers and fire barrier penetration seals, personnel from the ANO Fire Protection organization identified several deficiencies associated with penetration seals and barriers separating plant fire areas. Most of the deficiencies did not significantly affect the functional capability of the barriers; however, based on evaluations it was concluded that three of the conditions resulted in the affected barriers being inoperable. On January 14, 1991 two through wall voids were found located directly below structural 'I' beams which penetrated the block wall near the top of fire barrier FB-2111-06. The existence of the voids was initially detected by a Fire Protection specialist noting a small amount of air flow in the proximity of each void. Further detailed inspection of the wall revealed the presence of the voids. While inspecting another wall located in the same area a small void was also discovered in the grouting around a 2.5 inch diameter fire water pipe penetrating fire barrier FB-2111-11. On January 25, 1991 another fire barrier penetration was found to contain an inadequate depth of grout. Upon discovery of each of these conditions the ANO-2 control room was immediately notified. The fire barriers were declared to be inoperable and a roving fire watch was established in the affected areas in accordance with Technical Specification requirements.

C. Root Cause

The routine TS surveillance of fire barriers is performed by electrical maintenance personnel. Therefore, the additional inspections constituted an independent verification of the condition of the barriers and penetration seals. Additionally, due to the previous problems ANO management had recognized that improved formal training for inspection personnel and revisions to inspection procedures were needed to improve the quality of the routine inspection process.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Since these enhancements could not be completed prior to performance of the next scheduled TS surveillance, Fire Protection personnel provided a prejob briefing to electrical maintenance to increase awareness of the different types of fire barrier deficiencies that might exist and to clarify the existing procedural inspection criteria in order to increase the level of detail during the inspections. Therefore, the followup inspections by Fire Protection personnel also served to measure the effectiveness of the briefing conducted prior to the start of the TS surveillance activity.

While performing the inspections, it is apparent that the electrical maintenance personnel believed the observed conditions were acceptable. Based on this, the root cause of this event was attributed to a breakdown in communication between the electrical maintenance personnel and the Fire Protection group prior to performance of the TS surveillance. A contributing factor to this event as in previous similar events, continues to be the complexity of performing some of the required inspections. This includes several factors such as limited accessibility to many of the penetrations and portions of fire barriers being inspected and the large number of inspections being performed.

D. Corrective Actions

As a result of previous similar events (see Additional Information; Section G), several actions have already been initiated to improve the effectiveness and quality of performance of the routine TS surveillances of fire barriers. These actions include significant revisions to the current inspection procedures for both units at ANO and development and implementation of an improved formal training program for inspection personnel. These actions are scheduled to be completed prior to performance of the next scheduled TS surveillance as discussed in ANO's letter on this subject dated December 31, 1990 (0CAN129010).

Additionally, due to the complex and sometimes subjective judgements which are required by personnel performing the inspections, it was concluded that the inspection procedures should be reviewed and evaluated to determine if the procedures can be enhanced from a human factor perspective. Therefore, ANO personnel trained in the area of human performance evaluations will review and evaluate the planned revisions to the inspection procedures prior to their implementation.

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E. Safety Significance

The plant fire areas located on both sides of the degraded barriers are equipped with fixed fire detection systems which annunciate in the ANO-2 control room. The areas associated with degraded fire barriers FB-2111-06 and FB-2111-11 are also both equipped with automatic fire water suppression systems. Other fire suppression equipment, e.g., fire extinguishers and/or fire water hose reels are available to each area. Additionally, fire brigade personnel trained in fire fighting are available at all times should a fire occur. Based on these factors, significant protection against the spread of a fire existed; therefore, there was no safety significance related to these findings.

With regard to any potential generic concern that degraded fire barriers may exist in certain plant areas without these conditions being properly identified during the inspection process, it is important to note that on both units at ANO there are a total of approximately 8600 penetrations through fire barriers protecting safety related areas. The conditions discussed in the report and previously reported similar findings represent problems with an extremely small fraction of the total population of barriers and penetrations. Additionally, passive fire barriers and penetrations through the barriers constitute only one element of the overall fire protection program at ANO which also includes design features such as fire detection systems and automatic and manual fire suppression systems. Based on these factors the potential safety significance of these findings is considered to be minimal.

F. Basis for Reportability

Technical Specifications require that all fire barriers separating safety related areas shall be operable. Since the fire barriers discussed in this report had been inoperable for a time period greater than the allowable time of Technical Specifications, this event is reportable pursuant to 10CFR50.73(a)(2)(i)(B), operation prohibited by Technical Specifications.

G. Additional Information

Similar events involving degraded fire barriers were reported in LERs 50-368/90-013-00, 50-313/004-00 and 50-368/90-017-00.

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].